> **This Raw Listing contains the General**
> **Information Section and those Sequences**
> **containing ERRORS.**

```
 1   <110> BIOCHEM PHARMA INC.
 2         HAMEL, Jose
 3         BRODEUR, Bernard R.
 4         PINEAU, Isabelle
 5         MARTIN, Denis
 6         RIOUX, Clment
 7         CHARLAND, Nathalie
 8   <120> NOVEL STREPTOCOCCUS ANTIGENS
 9   <130> 12806-11PCT
10   <150> US 60/113,800
11   <151> 1998-12-23
12   <160> 102
13   <170> FastSEQ for Windows Version 3.0
```

ERRORED SEQUENCES FOLLOW

```
       14   <210> 102
E-->   15   <211> 821
       16   <212> PRT
       17   <213> S. pneumoniae
       18   <400> 102
       19         Cys Ala Tyr Glu Leu Gly Leu His Gln Ala Gln Thr Val Lys Glu Asn
       20          1               5                  10                  15
       21         Asn Arg Val Ser Tyr Ile Asp Gly Lys Gln Ala Thr Gln Lys Thr Glu
       22                         20                  25                  30
       23         Asn Leu Thr Pro Asp Glu Val Ser Lys Arg Glu Gly Ile Asn Ala Glu
       24                     35                  40                  45
       25         Gln Ile Val Ile Lys Ile Thr Asp Gln Gly Tyr Val Thr Ser His Gly
       26              50                  55                  60
       27         Asp His Tyr His Tyr Tyr Asn Gly Lys Val Pro Tyr Asp Ala Ile Ile
       28         65                  70                  75                  80
       29         Ser Glu Glu Leu Leu Met Lys Asp Pro Asn Tyr Gln Leu Lys Asp Ser
       30                         85                  90                  95
       31         Asp Ile Val Asn Glu Ile Lys Gly Gly Tyr Val Ile Lys Val Asn Gly
       32                         100                 105                 110
       33         Lys Tyr Tyr Val Tyr Leu Lys Asp Ala Ala His Ala Asp Asn Val Arg
       34                     115                 120                 125
       35         Thr Lys Glu Glu Ile Asn Arg Gln Lys Gln Glu His Ser Gln His Arg
       36                     130                 135                 140
       37         Glu Gly Gly Thr Ser Ala Asn Asp Gly Ala Val Ala Phe Ala Arg Ser
       38         145                 150                 155                 160
       39         Gln Gly Arg Tyr Thr Thr Asp Asp Gly Tyr Ile Phe Asn Ala Ser Asp
```

Input Set: **I471255.RAW**

```
40                          165 ·              170                    175
41        Ile Ile Glu Asp Thr Gly Asp Ala Tyr Ile Val Pro His Gly Asp His
42                     180                    185                    190 ·
43        Tyr His Tyr Ile Pro Lys Asn Glu Leu Ser Ala Ser Glu Leu Ala Ala
44                     195                    200                    205
45        Ala Glu Ala Phe Leu Ser Gly Arg Glu Asn Leu Ser Asn Leu Arg Thr
46                     210                    215                    220
47        Tyr Arg Arg Gln Asn Ser Asp Asn Thr Pro Arg Thr Asn Trp Val Pro
48        225                    230                    235                    240
49        Ser Val Ser Asn Pro Gly Thr Thr Asn Thr Asn Thr Ser Asn Asn Ser
50                     245                    250                    255 ·
51        Asn Thr Asn Ser Gln Ala Ser Gln Ser Asn Asp Ile Asp Ser Leu Leu
52                     260                    265                    270
53        Lys Gln Leu Tyr Lys Leu Pro Leu Ser Gln Arg His Val Glu Ser Asp
54                     275                    280                    285
55        Gly Leu Ile Phe Asp Pro Ala Gln Ile Thr Ser Arg Thr Ala Arg Gly
56                · 290                    295                    300
57        Val Ala Val Pro His Gly Asn His Tyr His Phe Ile Pro Tyr Glu Gln
58        305                    310                    315                    320
59        Met Ser Glu Leu Glu Lys Arg Ile Ala Arg Ile Ile Pro Leu Arg Tyr
60                     325                    330                    335
61        Arg Ser Asn His Trp Val Pro Asp Ser Arg Pro Glu Glu Pro Ser Pro
62                     340                    345                    350
63        Gln Pro Thr Pro Glu Pro Ser Pro Ser Pro Gln Pro Ala Pro Asn Pro
64                     355                    360                    365
65        Gln Pro Ala Pro Ser Asn Pro Ile Asp Glu Lys Leu Val Lys Glu Ala
66                     370                    375                    380
67        Val Arg Lys Val Gly Asp Gly Tyr Val Phe Glu Glu Asn Gly Val Ser
68        385                    390                    395                    400
69        Arg Tyr Ile Pro Ala Lys Asn Leu Ser Ala Glu Thr Ala Ala Gly Ile
70                     405                    410                    415 ·
71        Asp Ser Lys Leu Ala Lys Gln Glu Ser Leu Ser His Lys Leu Gly Ala
72                     420                    425                    430
73        Lys Lys Thr Asp Leu Pro Ser Ser Asp Arg Glu Phe Tyr Asn Lys Ala
74                     435                    440                    445 ·
75        Tyr Asp Leu Leu Ala Arg Ile His Gln Asp Leu Leu Asp Asn Lys Gly
76                     450                    455                    460
77        Arg Gln Val Asp Phe Glu Ala Leu Asp Asn Leu Leu Glu Arg Leu Lys
78        465                    470                    475                    480
79        Asp Val Ser Ser Asp Lys Val Lys Leu Val Asp Asp Ile Leu Ala Phe
80                     485                    490                    495
81        Leu Ala Pro Ile Arg His Pro Glu Arg Leu Gly Lys Pro Asn Ala Gln
82                     500                    505                    510
83        Ile Thr Tyr Thr Asp Asp Glu Ile Gln Val Ala Lys Leu Ala Gly Lys
84                     515                    520                    525
85        Tyr Thr Thr Glu Asp Gly Tyr Ile Phe Asp Pro Arg Asp Ile Thr Ser
86                     530                    535                    540
87        Asp Glu Gly Asp Ala Tyr Val Thr Pro His Met Thr His Ser His Trp
88        545                    550                    555                    560
89        Ile Lys Lys Asp Ser Leu Ser Glu Ala Glu Arg Ala Ala Ala Gln Ala
```

```
 90                          565  ·              570                575
 91        Tyr Ala Lys Glu Lys Gly Leu Thr Pro Pro Ser Thr Asp His Gln Asp
 92                      580                585                590
 93        Ser Gly Asn Thr Glu Ala Lys Gly Ala Glu Ala Ile Tyr Asn Arg Val
 94                      595                600                605
 95        Lys Ala Ala Lys Lys Val Pro Leu Asp Arg Met Pro Tyr Asn Leu Gln
 96           610                615                620
 97        Tyr Thr Val Glu Val Lys Asn Gly Ser Leu Ile Ile Pro His Tyr Asp
 98        625                630                635                640
 99        His Tyr His Asn Ile Lys Phe Glu Trp Phe Asp Glu Gly Leu Tyr Glu
100                         645                650                655
101        Ala Pro Lys Gly Tyr Thr Leu Glu Asp Leu Leu Ala Thr Val Lys Tyr
102                      660                665                670
103        Tyr Val Glu His Pro Asn Glu Arg Pro His Ser Asp Asn Gly Phe Gly
104                      675                680                685
105        Asn Ala Ser Asp His Val Gln Arg Asn Lys Asn Gly Gln Ala Asp Thr
106           690                695                700
107        Asn Gln Thr Glu Lys Pro Ser Glu Glu Lys Pro Gln Thr Glu Lys Pro
108        705                710                715                720
109        Glu Glu Glu Thr Pro Arg Glu Glu Lys Pro Gln Ser Glu Lys Pro Glu
110                      725                730                735
111        Ser Pro Lys Pro Thr Glu Glu Pro Glu Glu Glu Ser Pro Glu Glu Ser
112                      740                745                750
113        Glu Glu Pro Gln Val Glu Thr Glu Lys Val Glu Glu Lys Leu Arg Glu
114                      755                760                765
115        Ala Glu Asp Leu Leu Gly Lys Ile Gln Asp Pro Ile Ile Lys Ser Asn
116           770                775                780
117        Ala Lys Glu Thr Leu Thr Gly Leu Lys Asn Asn Leu Leu Phe Gly Thr
118        785                790                795                800
119        Gln Asp Asn Asn Thr Ile Met Ala Glu Ala Glu Lys Leu Leu Ala Leu
120                      805                810                815
121        Leu Lys Glu Ser Lys
122                      820
123        1/120

124

125        WDC99

126

127        WDC99
```
E--> 124
E--> 125
E--> 126
E--> 127

Input Set: **I471255.RAW**

Line	?	Error/Warning	Original Text
15	E	Input 821, Calc Seq.Length 823 differ	<211> 821
124	E	Invalid/Missing Amino Acid Numbering	
125	E	Wrong Amino Acid Designator	WDC99 401678-2.055190.0012
126	E	Invalid/Missing Amino Acid Numbering	
127	E	Wrong Amino Acid Designator	WDC99 401678-2.055190.0012